AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (currently amended) A method of using a marker comprising an integrin alpha 10 chain or an integrin alpha 10 chain and an integrin alpha 11 chain expressed on the cell surface of a mesenchymal stem cell or intracellular in a mesenchymal stem cell as a marker for mammalian mesenchymal stem cells, wherein said method comprises the steps of

> a) providing a sample comprising a mesenchymal stem cell, ~~and~~
>
> b) contacting the sample with a molecule which specifically binds integrin alpha 10 chain or integrin alpha 10 chain and integrin alpha 11 chain,
>
> c) detecting integrin alpha 10 chain or integrin alpha 10 chain and integrin alpha 11 chain expression on the cell surface of a cell of the sample or intracellular in a cell of the sample, and
>
> d) correlating the integrin alpha 10 chain or integrin alpha 10 chain and integrin alpha 11 chain expression detected in c) with the cell being the mesenchymal stem cell.

2. (previously presented) The method according to claim 1, wherein the integrin alpha 10 chain or the integrin alpha 10 chain and the integrin alpha 11 chain is/are expressed as a heterodimer(s) in combination with an integrin beta 1 chain.

3. (currently amended) A method for identifying a mammalian mesenchymal stem cell, the method comprising the steps of

a) providing a sample comprising a mesenchymal stem cell,

b) contacting the sample with a molecule which specifically binds integrin alpha 10 chain or integrin alpha 10 chain and integrin alpha 11 chain,

c) detecting integrin chain alpha 10 or integrin chain alpha 10 and alpha 11 expression on the cell surface of a ~~mesenchymal stem~~ cell <u>of the sample</u> or intracellular in a ~~mesenchymal stem~~ cell <u>of the sample</u>,

d) ~~scoring~~ <u>correlating</u> the integrin chain alpha 10 or integrin chain alpha 10 and alpha 11 expression <u>detected in c) with the cell being the mesenchymal stem cell</u>, and

e) identifying the <u>cell in c) as the</u> mesenchymal stem cell according to the ~~scoring~~ <u>correlation</u> in d) ~~above~~.

4. (previously presented) The method according to claim 3, wherein the expression in c) above is detected by detecting the integrin chain alpha 10 or integrin chain alpha 10 and alpha 11 protein expression.

5. (withdrawn) The method according to claim 3, wherein the expression in b) above is detected by detecting the integrin alpha 10 or the integrin alpha 10 and integrin alpha 11 mRNA expression.

6. (previously presented) The method according to claim 3, wherein the expression in c) above is detected by an immunoassay.

7. (withdrawn) A method for determining whether a test compound modulates a mammalian mesenchymal stem cell differentiation, the method comprising the steps of a) providing a mesenchymal stem cell that expresses integrin alpha 10 or the integrin alpha 10 and integrin alpha 11 b) contacting the mesenchymal stem cell with a test compound, and c) detecting a change in rate or pattern of differentiation of the mesenchymal stem cell as an indication of that the test compound modulates a mesenchymal stem cell differentiation.

8. (withdrawn) The method according to claim 7, wherein the rate or pattern of differentiation is detected by detecting integrin alpha 10 or integrin alpha 10 and integrin alpha 11 expression on the cell surface of said mesenchymal stem cell or intracellular in a mesenchymal stem cell.

9. (withdrawn) A method for producing an isolated population of mammalian cells enriched for mesenchymal stem cells relative a reference population, the method comprising the steps of a) providing at least a portion of a population of cells, or a portion of a reference population, comprising a mesenchymal stem cell and at least one cell other than a mesenchymal stem cells, b) introducing into the population of cells in a) above a compound identifying an integrin alpha 10 chain or integrin alpha 10 and integrin alpha 11 chain expressed on the cell surface of a mesenchymal stem cell or intracellular in a mesenchymal stem cell, c) selecting and isolating from the population of cells in b) above the mesenchymal stem cells, thereby producing a population of cells enriched for mesenchymal stem cells.

10. (withdrawn) The method according to claim 9, wherein the mesenchymal stem cells is identified as a mesenchymal stem cell by detecting expression of integrin

alpha 10 or integrin alpha 10 and alpha 1 1 chain expression on the cell surface of said mesenchymal stem cells.

11. (withdrawn) The method according to claim 9, wherein the selection in c) above is performed by fluorescent cell sorting.

12. (withdrawn) An enriched mammalian cellular population of mesenchymal stem cells, comprising at least one intact, viable mesenchymal stem cell, wherein the mesenchymal stem cell are characterized by a) expressing an integrin alpha 10 chain or integrin alpha 10 and integrin alpha 11 chain on the cell surface of or intracellular in said mesenchymal stem cell, b) being substantially free from expression of molecules specific for committed lymphohaematopoietic cells or uncommitted stem cells.

13. (withdrawn) An isolated mammalian mesenchymal stem cell expressing a marker comprising an integrin alpha 10 chain or an integrin alpha 10 chain and an integrin alpha 11 chain expressed on the cell surface of a mesenchymal stem cell or intracellular in a mesenchymal stem cell, obtainable by the method for producing a population of cells enriched for mesenchymal stem cells according to claim 9.

14. (withdrawn) A mammalian cellular composition comprising the enriched cellular population according to claim 12.

15. (currently amended) A method for identification of a mammalian mesenchymal stem cell, comprising utilizing a marker comprising an integrin alpha 10 chain or an integrin alpha 10 chain and an integrin alpha 11 chain expressed on the cell surface of a mesenchymal stem cell or intracellular in a mesenchymal stem cell, wherein said method comprises the steps of

a) contacting a sample comprising a mesenchymal stem cell with a molecule which specifically binds the marker, ~~and~~

b) detecting the marker ~~to identify~~ in a cell of the sample, and

c) identifying the cell in b) as the ~~the~~ mammalian mesenchymal stem cell based on the presence of the marker.

16. (withdrawn) A method for modulating differentiation of a mammalian mesenchymal stem cell, comprising utilizing a marker comprising an integrin alpha 10 chain or an integrin alpha 10 chain and an integrin alpha 11 chain expressed on the cell surface of a mesenchymal stem cell or intracellular in a mesenchymal stem cell.

17. (withdrawn) A method for isolating a mammalian mesenchymal stem cell comprising utilizing a marker comprising an integrin alpha 10 chain or an integrin alpha 10 chain and an integrin alpha 11 chain expressed on the cell surface of a mesenchymal stem cell or intracellular in a mesenchymal stem cell.

18. (withdrawn) A mammalian cellular composition comprising the isolated mesenchymal stem cell according to claim 13.

19. (previously presented) The method according to claim 1, wherein the molecule in b) is an antibody or fragment thereof.

20. (previously presented) The method according to claim 19, wherein the antibody is a monoclonal antibody.

21. (previously presented) The method according to claim 3, wherein the molecule in b) is an antibody or fragment thereof.

22. (previously presented) The method according to claim 21, wherein the antibody is a monoclonal antibody.